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APPRENTICESHIP TRAINING

SAWFILER Program

Alberta
CAREER DEVELOPMENT AND EMPLOYMENT
Apprenticeship and Trade Certification

DDN 7216360

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SAWFILER TRADE

THE GOAL OF APPRENTICESHIP TRAINING

To develop a competent tradesman who, through skill and knowledge, is capable of sharpening, servicing and repairing any type of sawblade, knife or other cutting instrument used in the lumber industry.

THE PRODUCT OF APPRENTICESHIP — a graduate who is able to:

★ have a thorough knowledge and understanding of the hand tools and power operated machines used to sharpen, service and repair sawblades and related cutting instruments.

★ be skillful in the safe use of these tools, in order to re-condition sawblades and related cutting instruments to required specifications.

★ be capable of reading and following instructions from handbooks, charts and other sources of specifications.

★ be skillful in repair and service requirements when no specifications exist.

★ know the characteristics of various metals used in the industry.

★ understand the effects of heat on metals and be skillful in performing repairs when heat producing methods are used.

★ be familiar with the work of other tradesmen doing related jobs, such as Machinists, Millwrights and Welders.

★ perform assigned tasks in accordance with quality and production standards required in industry.

SAWFILER
APPRENTICESHIP INFORMATION

Basic Requirements:

★ Indenture for four periods of trade experience.

★ Attend a four week technical training course in all first, second, third and fourth periods.

★ Fulfill the requirements for each period including a minimum number of hours of work experience, successfully complete the technical training course and obtain a satisfactory employer's report.

★ Education — a minimum acceptable education is a Grade 9 pass or equivalent as established by the Apprenticeship and Trade Certification office entrance examination.

★ Age — the minimum age for apprentices is 16 years. There is no upper age limit.

Credits:

★ Accelerated patterns of apprenticeship may be granted for related technical training and/or experience.

Benefits:

★ Apprenticeship is a learning-while-earning program. During the apprenticeship period, while working at the trade, apprentices are assured by regulation of a minimum percentage of the prevailing journeyman rate: 50% during the first period, 60% during the second period, 70% during the third period, 85% during the fourth period. Progress from one rate to the next takes place only after successful completion of all the requirements for each period. (details are outlined in the Record Book).

★ All apprentices 17 years of age and older are normally eligible for training allowances while attending technical training courses. These allowances are funded by the Canada Employment and Immigration Commission.

★ Administrative procedures establishing the amount of training allowance is complex and can vary with an individual's circumstances. Contact a local Canada Employment Centre for details.

★ An apprentice who successfully completes the program will graduate with an Alberta Completion of Apprenticeship Certificate and a Certificate of Qualification.

★ The most significant benefit to the graduate apprentice is that he is well trained in technical and practical aspects of the trade and is able to make a worthwhile and productive contribution to society. Society in return, will provide an opportunity for livelihood.

DIRECTIONS FOR PROSPECTIVE APPRENTICES

★ Contact your nearest Apprenticeship and Trade Certification office for detailed information and counselling (see list of offices on page 60).

★ Obtain an application form from the Apprenticeship and Trade Certification office and neatly complete, in full, the information requested of the apprentice.

★ Persevere in the search for apprentice employment and upon obtaining employment, give the application to the employer. It should be completed and returned to an Apprenticeship and Trade Certification office forthwith.

★ Any time credit, for previous experience in the Sawfiler trade, should be discussed with the employer and requested on the application form by the employer.

★ Attach to the apprentice application a copy (transcript) of the marks for your last year of school. Applicants who do not have their school transcripts or a grade 9 standing are required to write an entrance examination. If transcripts have been lost, contact Alberta Education for information on school transcripts.

★ Prepare to be called for an entrance examination following submission of your application. You will be advised of the date, time and location.

★ A contract of apprenticeship is entered into between the apprentice and the employer and should be signed within 90 days after the apprentice application has been approved. If contracts have not been issued within this time, contact the Apprenticeship and Trade Certification office.

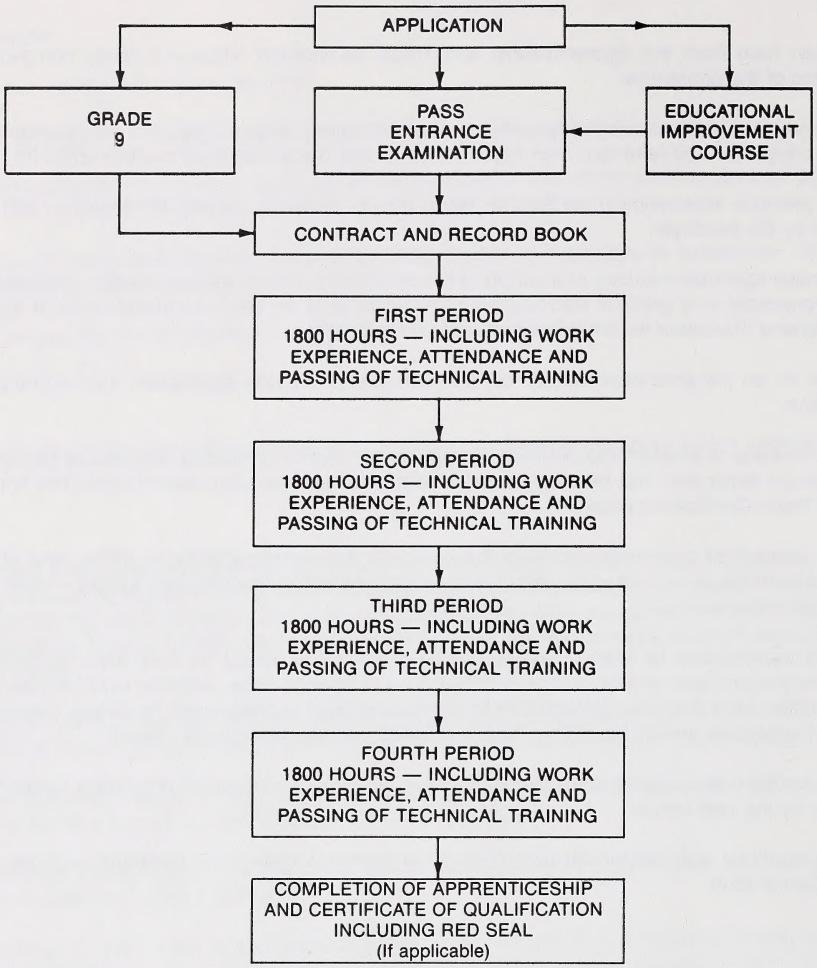
★ Before signing the contract of apprenticeship read the complete document carefully — know your obligations and responsibilities to your employer — know the employer's obligations and responsibilities to you — feel confident you have selected the right occupation.

★ Know when you will be expected to attend classes and be prepared to attend. In early May of each year, School Schedules are sent to you and your employer. The employer also receives a class selection card for you, which is to be completed and submitted for scheduling. Information on procedures also accompanies the above. Confirmation on the date you actually get scheduled and/or the Official Notice will follow at the appropriate time(s).

★ Prepare in advance for the financial obligations required of you during school training. Reference materials and school supplies are paid for by the apprentice.

★ While an apprentice, it will be your responsibility to respond promptly to mailed directions and requests from Apprenticeship and Trade Certification.

APPRENTICESHIP ROUTE TOWARD CERTIFICATION


APPLICATION
GRADE 9
PASS ENTRANCE EXAMINATION
EDUCATIONAL IMPROVEMENT COURSE
CONTRACT AND RECORD BOOK
FIRST PERIOD 1800 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
SECOND PERIOD 1800 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
THIRD PERIOD 1800 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
FOURTH PERIOD 1800 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
COMPLETION OF APPRENTICESHIP AND CERTIFICATE OF QUALIFICATION INCLUDING RED SEAL (If applicable)

APPRENTICESHIP COMMITTEE STRUCTURE

Sawfiler Provincial Apprenticeship Committee

The Provincial Apprenticeship Committee for the Sawfiler trade is comprised of members from Local Apprenticeship Committees from Hinton and Grande Prairie Regions.

This Committee is concerned with the policies that guide the program and make recommendations to the Apprenticeship and Trade Certification Board and the Executive Director of Apprenticeship and Trade Certification in the following areas:

- ★ Contribute current information relative to changes in the trade and requirements of industry.
- ★ Make recommendations for changes to existing trade regulations.
- ★ Assist in updating of the training program through recommendations for revisions to the course outline and attendant examinations.

Sawfiler Local Apprenticeship Committee

Local Apprenticeship Committees are concerned with individuals and trade situations within a local region. Meetings are held throughout the year to make recommendations and to discuss problems relating to the apprenticeship program. Members who serve on committees are nominated by employer and labour organizations, and membership is equally divided into employer and employee representation in accordance with The Manpower Development Act.

Apprenticeship Committee Members:

Mr. H. Ribar — Grande Prairie LAC — Employer
Mr. P. Grant — Grande Prairie LAC — Employee
Mr. G. Davis — Grande Prairie LAC — Employer (Alternate)
Mr. T. Bettenson — Grande Prairie LAC — Employee (Alternate)
Mr. A. Heske — Hinton LAC — Employer
Mr. A. Bergeson — Hinton LAC — Employee
Mr. R. Corser — Hinton LAC — Employer (Alternate)
Mr. D. Jones — Hinton LAC — Employee (Alternate)

SAWFILER PROGRAM
COURSE OUTLINE

The Provincial Apprenticeship Committee for the Sawfiler trade has recommended the British Columbia Lumber Manufacturing Industry course outline be used as suitable instructional vehicle for the trade.

Training is delivered, through agreement with the British Columbia Apprenticeship authorities, at the British Columbia Institute of Technology — Burnaby, British Columbia. Administration and certification procedures are the responsibility of Apprenticeship and Trade Certification, Alberta Career Development and Employment.

PROCEDURES FOR RECOMMENDING REVISION(S) TO THE COURSE OUTLINE

Any concerned citizen or group in the Province of Alberta may make recommendations for change by writing to Apprenticeship and Trade Certification, Edmonton.

It is requested that recommendations for change refer to specific areas and state references used. Recommendations received will be placed before regular meetings of the Provincial Apprenticeship Committee.

SAFETY EDUCATION

Safe working procedures and conditions, accident prevention and the preservation of health is of primary importance in the Apprenticeship programs in Alberta. These responsibilities are shared and require the joint efforts of the government, employers, employees and the general public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm and that safe learning experiences and environment can be created by controlling the variables and behaviors that may contribute to or cause an accident and/or an injury.

It is generally recognized that a safe attitude contributes to an accident free environment. As a result a healthy safe attitude towards accidents will benefit an employee by helping to avoid injury, loss of time and loss of pay.

A tradesman is possibly exposed to more hazards than any other person in the work force and therefore, should be familiar with the Occupational Health and Safety Act and Regulations dealing with his own personal safety and the special safety rules applying to each job.

LEGAL AND ADMINISTRATIVE ASPECTS

Employer's Responsibilities:

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer. The company is responsible for:

1. The provision and maintenance of safety equipment
2. The provision of protective devices and clothing (as required by the Occupational Health & Safety Act, General Safety Regulations)
3. The enforcement of safe working procedures
4. Adequate safeguards for machinery, equipment and tools
5. Observance of all accident prevention regulations
6. Adequate training to allow a worker to use or operate equipment in an effective and safe manner.

Government's Responsibilities:

Apprenticeship and Trade Certification in conjunction with the respective Provincial Apprenticeship Committee assumes the responsibility to assure that adequate safety is reflected in the curriculum and that adequate safety instruction is presented at the training establishments.

The Occupational Health and Safety Inspection Branch assumes the responsibility for periodic inspection of the operation to ensure that regulations for industry are being correctly observed.

Individual's Responsibilities:

The employee is responsible for:

1. Knowing and working in accordance with the safety regulations pertaining to job environment and
2. Working in such a way as not to endanger himself or his fellow employees

The major factor in safety is the individual employee, his personal attitude toward safety and having an awareness of the respective safety regulation.

PREFACE

The lectures, demonstrations and assignments outlined herein, are intended to familiarize and to prepare the apprentice for the performance of his occupation within the Sawfiler trade. To cope with present day requirements and to become able to adjust to situations that will arise apart from nominal work experience during apprenticeship. It is accepted that the apprentice should appreciate and develop skills within the scope of the trade.

★ Instruction in trade matters often lends to both shop and theory situations, and therefore, this outline does not define precise divisions.

★ With respect to related subjects (mathematics, etc.) it is accepted that knowledge of these areas is important for the tradesman. It is specified that all matters reflect the Sawfiler trade and all the depth of instruction relate to the needs of the journeyman.

Imperial (Inch) — SI (METRIC)

The requirements of industry (metric) to meet a demand for SI (metric) products require the preparation of Sawfiler apprentices to include both Imperial and SI knowledge and skills. Technical training therefore, should include theoretical and practical instruction to enable apprentices to perform adequately in both of these systems.

Occupational Health and Safety Regulations

The relationship between these regulations and safety will be observed throughout the program.

SAWFILER PROGRAM
FIRST PERIOD

Subjects and Time Distribution

First Period	Subjects	4 Weeks	120 Hours
Section One:	Introduction to the Trade		10
Section Two:	Safety and Work Habits		10
Section Three:	Tools of the Trade		11
Section Four:	General Trade Knowledge		12
Section Five:	Band Saw Fitting		16
Section Six:	Grinding Wheels		19
Section Seven:	Basic Circular Saw Fitting		21
Section Eight:	Chain Saws		23
Section Nine:	Saw Guides, Scrapers, Shearboards and Cooling Systems		24
Section Ten:	Knife Grinding		24
Section Eleven:	Oxyacetylene Welding		26

FIRST PERIOD TECHNICAL TRAINING
SAWFILER TRADE
COURSE OUTLINE

SECTION ONE: **INTRODUCTION TO THE TRADE**

TOPIC	COURSE OBJECTIVES
	Upon completion of this section the apprentice will be able to:
A. Scope of the Trade	1. Describe the scope of the trade: (a) maintenance to cutting edge of all saws to cut a high speeds and efficiently (b) maintenance to saw plate in order to cut straight lines as efficiently as possible (c) maintain all related equipment in order to eliminate down time
B. Safety	1. Describe responsibilities of the apprentice and the employer: (a) under the apprenticeship contract (b) under the Labour Code (c) expectations of Saw Filer's Association 2. Identify the responsibilities of the employer to the apprentice: (a) under the apprenticeship contract (b) under the Labour Code and the Employment Standards Act
C. Required Skills and Characteristics	1. Describe required skills and characteristics of successful employee: (a) educational requirements (b) professional ethics (c) work habits (d) mechanical ability
D. Trade Terms	1. Identify trade terminology including formal and colloquial terms related to: (a) sawmill equipment (b) saw fitting (c) hammering (d) benching
E. Metals and Alloys	1. Identify metals and alloys used in: (a) saw steels (b) babbitts

SECTION TWO: **SAFETY AND WORK HABITS**

A. W.C.B. Regulations	1. List and describe the applicable W.C.B. regulations concerning sawmills, shingle mills and related requipment: (a) crack repairs (b) welding (c) speeds (d) band wheels

TOPIC	COURSE OBJECTIVES
B. Personal Safety	
	1. Identify, select and use the appropriate personal protective clothing and equipment: (a) grinding (b) noise (c) saw handling (d) welding
C. Safe Work Environment	
	1. Describe and demonstrate clean and safe work environment: (a) shop (b) equipment (c) tools (d) flammables (storage and use) (e) compressed gases (f) waste facilities
D. Power Operated Equipment and Machinery	
	1. Describe and demonstrate safe use of all power operated manual and automatic equipment.
E. Lock-Out Procedures	
	1. Explain and demonstrate lock-out procedures for: (a) filing room equipment (b) mill equipment
F. Safe Saw Handling	
	1. Identify and demonstrate safe saw handling procedures: (a) in the filing room (b) on the mill floor
G. First Aid Stations	
	1. Locate first aid station and equipment: (a) shop (b) plant
H. Elementary First Aid	
	1. Demonstrate elementary first aid procedures.
I. Fire	
	1. Identify fire safety regulations and equipment. 2. Identify, locate and operate fire fighting equipment.
J. In-Plant Safety	
	1. Identify in-plant regulations including job safety breakdowns. 2. Describe safety committees.
SECTION THREE:	**TOOLS OF THE TRADE**
A. Hand Tools	
	1. List and identify types and purposes of various hand tools: (a) wheel dressers (b) gauges (circular and band saw) (c) files (d) hammers

TOPIC	COURSE OBJECTIVES
	(e) wrenches (f) depth gauges (g) wire gauge (h) upsets (i) anvil setting gauge (j) forging tools (k) grinding jigs (dies and anvils) (l) alignment tools (wheel and teeth) (m) shank wrenches (n) chain breakers
B. Hand Tool Safety	
	1. Demonstrate the safe use of various hand tools.
C. Hand Tool Maintenance	
	1. Describe and demonstrate the care and maintenance of hand tools.
D. Air Regulators	
	1. Describe and demonstrate the use and adjustments of air regulators.
SECTION FOUR:	**GENERAL TRADE KNOWLEDGE**
A. Cutting Systems	
	1. Identify and describe different ways of cutting wood fibre: (a) ripping (i) band and circular (b) cross cutting (i) circular and band (c) combination (i) circular
B. Tooth Profile	
	1. Identify and describe the various tooth profiles: (a) band saws (i) angles, space, depth (b) circular (i) K style (ii) P style (iii) M style (iv) R & S style (c) frost teeth
C. Kerf Requirements	
	1. Identify and describe the purpose of set and required amount: (a) band saws (b) circulars (c) gang saws
D. Types of Set	
	1. Describe and identify types of set used on band saws: (a) spring (b) swage (c) stellite

TOPIC	COURSE OBJECTIVES
	2. Identify and describe types of set used on circular saws: (a) spring (b) swage (c) inserted teeth (i) rip and cross cut (d) hollow ground (e) carbide (f) stellite
E. Tooth Problems	1. Identify and describe tooth problems that cause crumble: (a) causes (b) cures 2. Identify and describe causes and cures of tooth problems other than crumble: (a) missing corner (b) bent teeth (operational and swage) (c) loss of back (d) clamp marks running through swage (e) missing and broken tips
F. Swages	1. Identify and describe the use of all types and sizes of swages: (a) band saw (hand and air) (b) gang saw (hand and air) (c) circular (hand and air) (d) shingle
G. Maintenance and Set-Up of Swages	1. Describe and demonstrate set-up and identify parts and maintenance points of swages: (a) anvils (i) carbide (ii) carbon steel (b) different dies (i) long bite (ii) short bite (iii) proctor (iv) "Q" style (c) clamp screws (i) carbon steel (ii) carbide (d) stop bracket and stops (e) head and front guide arm (f) anvil setting gauges (g) circular swage set-up
H. Air Assist Equipment (swage and shaper) Maintenance	1. Identify and describe maintenance points on air assist swages and shapers: (a) pressure (b) cylinder gaskets (c) valve assembly and gaskets (d) "O" rings (piston and rod) (e) air valve (f) piston and pin (g) speed control (h) repair kit (air valve) (i) oiler

TOPIC	COURSE OBJECTIVES
I. Swage Maintenance Problems	1. Identify and describe problems caused by improper swage maintenance and parts wear: (a) bent teeth (b) crumble (c) loss of back (d) screw mark running through swage (e) too much swage (f) too thin at the point
J. Shapers	1. Identify and describe all types and sizes of shapers: (a) band (hand and air assist): (i) old style (ii) #5500-B and #5700-B series (iii) #6900-B (b) circular (hand and air assist): (i) old style (ii) #5700-C (iii) #6900-C (iv) #5500-S (v) Pribnow (c) gang (hand and air assist): (i) old style (ii) #5700 gang
K. Shaper Parts and Maintenance	1. Describe and demonstrate set-up, identify and describe parts and maintenance of shapers (hand and air assist); (a) band #1, #2, #3, (old style) #5500-B, #5700-B, #5700-BA and #6900-B: (i) adjust kerf (ii) centre dies (iii) bevel alignment (iv) tooth stop required (v) adjust to plate thickness (vi) wearing parts (b) gang #2G and #3G, 5700-G: (i) adjust kerf (ii) centre dies (iii) bevel alignment (iv) tooth stops (v) adjust to plate thickness (vi) wearing parts (c) circular #4, #5, #5700-C and #6900-C: (i) adjust kerf (ii) centre dies (iii) bevel alignment (iv) tooth stops (v) adjust to plate thickness (vi) wearing parts 2. Identify and describe problems caused by improper maintenance: (a) teeth off to one side (b) crumble (c) wrinkled points (d) too much and too little shape

TOPIC	COURSE OBJECTIVES
L. Tooth Alignment	1. Identify damaged teeth and demonstrate accepted maintenance procedures to correct them in order to eliminate marks: (a) bent (b) rocked (c) crumbled (d) welded (e) missing corners 2. Describe and demonstrate use of tooth alignment equipment: (a) alignment gauges (b) set wrenches (c) swage dolly (d) peen hammer
M. Sharpening Procedures	1. Describe and demonstrate safe sharpening procedures considering: (a) proper equipment (b) sufficient help 2. Describe and demonstrate cleaning procedures: (a) sawdust and water (b) pitch and packed sawdust 3. Describe and demonstrate all inspections in sharpening of band saws: (a) double cut (bottom side) (b) damaged teeth (c) swage or point-up (d) teeth lubricants (e) swage requirement (f) shaped to required kerf (g) wheel profile (h) feed finger position (i) crack check and maintenance (j) check face, back and gullet to the required standard
N. Proctor Roll and Peening	1. Describe the proctor roll and demonstrate its use: (a) position (b) pressure (c) maintenance 2. Describe and demonstrate peening: (a) hammer and dolly (b) location
O. Hard Surfacing of Saw Teeth	1. Describe stellite tipping: (a) band saw (b) circular (c) gangs (d) shingle 2. Describe and demonstrate carbide tipping: (a) band saws (b) circular saws 3. Describe heat induction tip hardening.

TOPIC	COURSE OBJECTIVES
P. New Developments	
	1. Describe new developments to the forest industry: (a) #84 auto point swage and shaper (b) the rimsaw (c) the smart saw
Q. Micrometers and Vernier Calipers	
	1. Demonstrate the use of micrometers and vernier calipers: (a) imperial (b) metric
R. Mathematics	
	1. Solve applied problems using formulas for: (a) diameters (b) circumference 2. Solve applied problems involving speeds: (a) R.P.M. (b) S.F.P.M.
SECTION FIVE:	**BAND SAW FITTING**
A. Band Saw Safe Handling Practices	
	1. Describe and demonstrate safe handling practices of band saws: (a) removal from crates (b) untieing of new saws (c) changing hand (d) placement and removal from grinder (e) placement and removal from bench
B. Band Saw Inspection Procedures	
	1. Describe and demonstrate all inspection procedures: (a) cracks (b) welds (c) lumps (d) ridges (e) twists (f) dished and turned over saw (g) dullness (h) tooth damage
C. Crack Maintenance	
	1. Describe and demonstrate procedures for repairs to cracks: (a) punching (b) welding (c) annealing (d) dressing (e) plate maintenance
D. Missing Teeth and Missing Tips	
	1. Describe and demonstrate procedures for replacing teeth and tips: (a) welding in blank (b) welding teeth (c) building teeth (d) low teeth

TOPIC	COURSE OBJECTIVES
E. Kerf Requirement	1. Determine kerf requirements for any given thickness of saw plate. 2. Describe required kerf and S.F.P.M. for various types of timber and sets: (a) spring set (i) soft wood — kiln dry — green — frozen (ii) hard wood — kiln dry — green — silica (b) swage set (i) soft wood — kiln dry — green — frozen (ii) hard wood — green — dry — silica (c) stellite (i) soft wood — kiln dry — green — frozen (ii) hard wood — green — dry — silica (d) S.F.P.M. (i) hardwood (ii) softwood (iii) frozen
F. Swaging Procedures	1. Describe and demonstrate swaging procedures for: (a) new saws (b) rocked saw (c) welded teeth (d) built up teeth 2. Describe and demonstrate swaging of band saw: (a) tooth lubrication (b) check swage set-up (c) clamp swage on saw tooth (d) push die handle to stop (e) release clamp screw (f) pull back die handle to stop (g) gauge tooth for required width (h) O.K. — proceed to next tooth 3. Describe maintenance problems causing faulty swage: (a) insufficient swage (b) too much swage (c) too thick at point (d) too thin at point (e) pulling to one side (f) purpose of stops and brackets

TOPIC	COURSE OBJECTIVES
G. Shaper Adjustment	1. Describe and demonstrate shaper adjustment for various types of shapers used in the trade: (a) old style (1-5) (b) #5500 and #5700 series (c) #6900 (d) Pribnow (e) others
H. Shaping Procedures	1. Describe and demonstrate shaping procedures (hand and assist) for: (a) band saws (b) gang saws (c) circular saws
I. Shaper Maintenance	1. Describe and demonstrate shaper maintenance on various types of saws: (a) tooth stops (b) dies (carbide and carbon steel) (c) screws (d) wear strips
J. Tooth Alignment	1. Describe and demonstrate alignment of band saw teeth: (a) standard procedure — operational saw (b) welded teeth (c) rocked teeth (d) badly bent tooth (e) turned over saw
K. Maintenance and Lubrication	1. Describe and demonstrate maintenance points on band saw grinders: (a) saw carriage and stand saw rests (single and double cut) (b) feed finger and holder (c) cones (head assembly) (d) cams and rollers (e) face plate alignment (f) feed finger track, cones and rollers (g) head lifting screw and nut (h) bearings (i) gate assembly and adjustments (j) saw lifting screw, crown gears and couplings 2. Describe and demonstrate installation of cams and adjustment to obtain proper tooth profile to manufacturers' specifications: (a) multiple cams and change procedures (b) feed cam (c) lift cam 3. List and describe uneven grinding problems in the function of automatic band saw grinders. 4. Describe and demonstrate lubrication of all band saw grinders: (a) bearings (b) non lubrication points

TOPIC	COURSE OBJECTIVES
L. Proctor Roll and Peening	1. Demonstrate the use of the Proctor roll: (a) position (b) pressure (c) maintenance 2. Demonstrate peening: (a) on grinder (b) on bench
M. Hand Sharpening	1. Describe and demonstrate hand sharpening of a band saw: (a) type of file and proper use (b) missing corners (c) crumble (d) welded teeth (e) built up teeth (f) rocked teeth
N. Sharpening Inspection	1. Describe and demonstrate check points on final sharpening inspection of a band saw: (a) missing corner (b) face (c) back (d) gullet (e) rocked portion (f) crumbled teeth (g) welded teeth (h) built up teeth (i) teeth alignment
SECTION SIX:	**GRINDING WHEELS**
A. Grinding	1. Identify and describe types of grinding wheels commonly used: (a) vitrified (b) resinoid (c) diamond 2. Identify and describe different shapes of wheels and where normally used: (a) straight (b) saucer (c) flared cup (d) cup (e) cylinder (f) segments
B. Safety Practices, Storage, Care and Handling	1. Describe and demonstrate safety checks for grinding wheels considering: (a) R.P.M. (b) cracks (c) blotters (d) collars 2. Describe and demonstrate proper storage, care and handling of grinding wheels: (a) how to store, care and handle (b) where to store

TOPIC	COURSE OBJECTIVES
C. Grinding Wheel Mounting	1. Describe and demonstrate the installation of various grinding wheels on different types of grinding machines: (a) band saw grinder (b) automatic and hand circular saw grinders (c) knife grinders (d) carbide saw grinders (e) hand grinders (f) bench grinders
D. Grinding Wheel Dressing and Shaping	1. Describe wheel dressing for: (a) band saws (b) circular saws (c) knife grinders (straight cup and profile) (d) carbide grinding 2. Identify and describe different types of wheel dressers: (a) dressing brick — vitrified and resinoid — diamond wheel (b) metcalfe dresser (c) desmond dresser (d) universal dresser (e) star dresser (f) diamond profile dresser 3. Inspect and demonstrate dressing to obtain correct profile for different tooth outlines and knife cutting edges: (a) band saw — standard and frost teeth (b) hollow ground saws — plunge and generative (c) trimsaw — spring set (d) slasher saws (e) cut off saws (f) profile knives (g) straight knives
E. Inspect and Dress Other than for Correct Profile	1. Inspect and demonstrate dressing of wheels: (a) dirt (b) glaze (c) oil
F. Grinding Wheel Speeds	1. Describe and demonstrate proper and safe wheel operating speed for: (a) vitrified — saws and knives (b) resinoid — saws and knives (c) diamond — carbide tip saws and knives

TOPIC	COURSE OBJECTIVES
SECTION SEVEN:	**BASIC CIRCULAR SAW FITTING**
A. Safe Handling Practices	1. Describe and demonstrate safe handling practices for circular saws: (a) hoists (b) cradles (c) dollies (d) rim clamps (e) cut-off saw rigging 2. Identify and describe personal safety equipment: (a) eyes (b) ears (c) respiratory (d) toes (e) hands (f) follow lock-out procedures
B. Types of Circular Saws	1. Identify and describe all types of circular saws: (a) cut-off saw — solid and inserted teeth (b) head — solid and inserted teeth (c) edges — solid, insert, carbide and stellite teeth (d) trim — solid and carbide teeth (e) slasher (f) double arbour strob (g) lath — solid, insert and carbide tip teeth
C. Circular Saw Inspection	1. Identify and describe all inspection points before grinding a saw: (a) tooth damage (b) set (c) dish (d) cracks (e) welds
D. Crack Maintenance	1. Describe W.C.B. regulations on repairs to all types of cracks in circular saw: (a) length (b) rim (c) collar area 2. Describe and demonstrate different procedures to arrest cracks: (a) punching (b) welding (c) drilling
E. Tooth Profiles	1. Identify and describe the various tooth profiles and cutting across and with the wood fibre: (a) "K" style (b) "P" style (c) "M" style (d) "N", "R" and "S" style

TOPIC	COURSE OBJECTIVES
F. Tools and Equipment	1. Select and describe all necessary tools and equipment for the maintenance of the cutting edge to any given circular saw: (a) sets (b) wheel selection (c) grinders (d) dressers (e) inserted teeth
G. Jointing	1. Describe and demonstrate the joining of circular saws: (a) cross-cut (b) rip
H. Saw Sets	1. Describe and demonstrate different setting equipment used on circular saws to obtain the required clearance to any given saw: (a) hand (b) hammer (c) power (d) swage and shaper
I. Circular Saw Grinding Equipment	1. Identify and describe all types of grinding equipment: (a) manual (b) automatic
J. Grinder Set-Ups for Circular Saws	1. Describe and demonstrate the setting up of manual and automatic grinders for: (a) rip (b) cross-cut
K. Grinder Maintenance and Lubrication	1. Identify and describe all maintenance points: (a) feed finger and assembly (b) cam set-ups (c) gate assembly (d) oscillation assembly (e) head assembly (f) stroke (g) multiple lift (h) centering 2. Identify and describe lubrication and non-lubrication points: (a) bearing (b) saw clamp (c) non lubricating points
L. Sharpening Methods	1. Describe and demonstrate various sharpening methods: (a) plunge grinding (b) generative grinding (c) hand sharpening

TOPIC	COURSE OBJECTIVES
SECTION EIGHT:	**CHAIN SAWS**
A. Safety and Lubrication	1. Describe and demonstrate safe handling and lubrication of all chain saws: (a) safety equipment (b) oil baths (c) oilers
B. Types of Chain	1. Identify and describe different types of chain: (a) 300 pond (b) pond and deck (c) power saw
C. Gauge and Pitch	1. Describe and calculate chain gauge and pitch.
D. Inspection and Repairs	1. Describe and demonstrate proper inspection and repair procedures and causes to: (a) tie straps (b) cutters (c) drive links (d) tight joints (e) crooked cutting (f) sprockets (g) nose bars
E. Set-Up and Sharpening	1. Describe and demonstrate grinder set-up and sharpening of chain saws by: (a) manual (file) (b) grinders 2. Describe and demonstrate sharpening of: (a) cutters (b) depth gauge or raker 3. Describe and demonstrate special purpose sharpening: (a) ripping (b) boring 4. Identify and describe tools required for set-up and sharpening: (a) files (b) raker gauge (c) chain breakers (d) rivet punch
F. Grinding Wheels and Profile	1. Describe and demonstrate required profile and wheel thicknesses: (a) cutters (b) depth gauge (raker)

TOPIC	COURSE OBJECTIVES
G. Troubleshooting	1. Identify and describe chain saw problems: (a) no oil (b) chain too tight or too loose (c) worn sprockets (d) bent bars (e) worn grooves (f) sharpening errors (g) stretched chain
SECTION NINE:	**SAW GUIDES, SCRAPERS, SHEARBOARDS AND COOLING SYSTEMS**
A. Scrapers	1. Identify and describe various types and sizes of bandmill wheel scrapers: (a) location (b) materials (c) bevels
B. Cooling Systems	1. Identify and describe various types of cooling systems used in the trade: (a) bandmills (b) edgers (c) circular head saws (d) diamond wheels 2. Identify types of liquid used in cooling systems: (a) water (conventional and spray) (b) oil (conventional and spray)
C. Shearboards	1. Identify and describe various types of shearboards: (a) single cut (resaws — vertical and horizontal, twins and quads) (b) double cuts (c) outer saw shear (headrigs) (d) bent bars (e) worn grooves (f) sharpening errors (g) stretched chain
SECTION TEN:	**KNIFE GRINDING**
A. Safety	1. Identify and describe safe handling practice of chipper knives: (a) straight thick knives (b) straight thin knives (c) profile cutters (d) counter knives
B. Knife Types	1. Identify types of knives: (a) face mounted (b) enclose (clamp type) (c) all makes of chipping heads (d) drum (e) lily pad (f) hogs

TOPIC	COURSE OBJECTIVES
C. Knife Inspections and Required Angles	1. Inspect and determine required angles according to manufacturers' specifications.
D. Knife Grinders and Set-Up	1. Identify and describe the set-up of a typical knife grinder (use one that apprentice is familiar with).
E. Grinding Wheel Dressing	1. Describe and demonstrate wheel dressing of the cutting face; (a) cup (b) cylinder (c) straight (d) profile (e) segments
F. Grinding Wheel Profile	1. Determine and shape grinding wheel to required profile.
G. Sharpening Knives	1. Describe knife sharpening: (a) thick (b) thin (c) profile 2. Describe and demonstrate repairs to damaged portion of knife. 3. Identify and describe problems arising in grinding: (a) too heavy a feed (b) hard and soft wheel (c) vitrified and resinoid wheels (pros and cons) (d) dressing cutting edge
H. Babbitt and Balance	1. Describe and demonstrate babbitting of knives in a safe manner: (a) straight (b) profile 2. Identify and describe tools required for babbitting and balance: (a) babbitt (type) (b) melting pot (c) knife jigs (d) ladle (e) babbitt file or milling cutter 3. Describe knife balancing: (a) thin knives (b) thick knives (c) profile knives
I. Troubleshooting Points and Procedures	1. Identify and describe general knife and chipper problems: (a) knife breakage (b) babbitt thickness (c) counter knife maintenance (d) worn knife holders (e) anvil maintenance (f) enclosed slot breakage

TOPIC	COURSE OBJECTIVES
J. Lubricants	1. Describe types of lubricants and coolants, their uses and limitations: (a) water (b) oil and water (c) spray
SECTION ELEVEN:	**WELDING**
A. W.C.B. Regulations	1. Describe and itemize W.C.B. regulations applicable to oxyacetylene welding in the saw trade.
B. Safe Welding Practices	1. List and describe the precautions to be considered when using welding equipment: (a) storage, handling, transportation and use of cylinders (b) securing and positioning burning outfit (c) fire hazards and extinguishers safe working pressures (e) proper clothing (f) checking for leaks (g) eye protection — goggles and screens (h) ventilation (i) explosive substances
C. Identification of Welding Equipment	1. List and describe the components and features of the oxyacetylene outfit: (a) oxygen and acetylene cylinders — construction, safety features and pressures (b) oxygen and acetylene regulators — one and two stage (c) hoses — construction, colour and maintenance (d) flash backs and burn backs (e) reverse flow control valves (f) torch and tip (g) tip cleaners (h) goggles — glass shade (i) striker (j) fire extinguisher
D. Setting Up and Shutting Down Equipment	1. Demonstrate the safe procedure in setting up and shutting down welding equipment: (a) secure cylinders and crack valves — acetylene upright (b) attached regulators, hoses, torch and tip (c) set working pressures (d) check for leaks (e) shut down equipment safety — bleed hoses
E. Regulators and Valves	1. Demonstrate changing and setting of regulators, and opening/closing of valves.

TOPIC	COURSE OBJECTIVES
F. Tip Cleaning	1. Describe and demonstrate correct tip cleaning procedures: (a) drill (b) cleaners
G. Torch Lighting Procedures	1. Describe and demonstrate torch lighting procedures: (a) bleed lines (b) oxygen (c) acetylene (d) pressure adjustments
H. Flames	1. Describe and demonstrate flame adjustments: (a) oxydizing (b) carbonizing (c) neutral
I. Operating Oxyacetylene Welding Equipment	1. Demonstrate the correct operation of oxyacetylene equipment: (a) select appropriate tip size (b) clean the tip (c) open valves and adjust regulators for working pressure (d) light torch and adjust the pre-heat length and neutral flame (e) travel at appropriate speed and tip inclination
J. Crack Welding	1. Describe and demonstrate proven skills and procedures in the welding of cracks. 2. Select and use appropriate tools and equipment required: (a) safety equipment (b) proper torch (c) upset and forging tool (d) forging hammer (e) welding rod (f) striker 3. Describe and demonstrate methods and procedures of: (a) welding clamp (b) levelling slab
K. Welding and Building Up Teeth	1. Describe and demonstrate proven methods of welding and building up saw teeth: (a) welding clamp (b) bench (c) grinder 2. Demonstrate the following procedures on built up saw teeth: (a) forging (b) shaping (c) annealing

TOPIC	COURSE OBJECTIVES
L. Welding Equipment Maintenance	1. Describe and demonstrate maintenance of welding equipment: (a) welding clamp (b) forging hammer (c) forging tool (d) tips (e) torch (f) gauges

SAWFILER PROGRAM
SECOND PERIOD

Subjects and Time Distribution

Second Period	Subjects	4 Weeks	120 Hours
Section One:	Review and Safety		30
Section Two:	Tools of the Trade		31
Section Three:	General Trade Knowledge		31
Section Four:	Band Saw Fitting		32
Section Five:	Grinding Wheels		33
Section Six:	Basic Circular Saw Fitting		34
Section Seven:	Chain Saws		35
Section Eight:	Saw Guides, Scrapers, Shearboards and Cooling Systems		36
Section Nine:	Welding		37

SECOND PERIOD TECHNICAL TRAINING
SAWFILER TRADE
COURSE OUTLINE

SECTION ONE: **INTRODUCTION TO THE TRADE**

TOPIC	COURSE OBJECTIVES
	Upon completion of this section the apprentice will be able to:
A. Review and Extension	1. Review material covered in first period as required.
B. Personal Safety	1. Identify, select and use the appropriate personal protective clothing and equipment: (a) grinding (b) noise (c) saw handling (d) welding
C. Safe Work Environment	1. Maintain a clean and safe work environment: (a) shop (b) equipment (c) tools (d) flammables (storage and use) (e) compressed gases (f) waste facilities
D. Power Operated Equipment and Machinery	1. Demonstrate the safe use of all power operated manual and automatic equipment.
E. Lock-Out Procedures	1. Demonstrate lock-out procedures for: (a) filing room equipment (b) mill equipment
F. Safe Saw Handling	1. Demonstrate safe saw handling procedures: (a) in the filing room (b) on the mill floor
G. First Aid Stations	1. Locate first aid station and equipment: (a) shop (b) plant
H. In-Plant Safety	1. Identify in-plant regulations including job safety breakdowns. 2. Describe safety committees.

TOPIC	COURSE OBJECTIVES
SECTION TWO:	**TOOLS OF THE TRADE**
A. Power Tools	1. List and describe types and uses of power tools.
B. Power Tool Safety	1. Demonstrate the safe use of power tools: (a) hand grinders (b) uniplanes (c) jockey grinders
C. Power Tool Maintenance	1. Describe and demonstrate care and maintenance of power tools.
SECTION THREE:	**GENERAL TRADE KNOWLEDGE**
A. Shapers	1. Identify and describe circular types (hand and air assist) and sizes of shapers: (a) old style (b) #5700-C (c) #6900-C (d) #5500-S (e) Pribnow
B. Shaper Parts and Maintenance	1. Describe and demonstrate set-up, identify and describe parts and maintenance of shapers (hand and air assist): (a) circular #4, #5, #5700-C and #6900-C: (i) adjust kerf (ii) centre dies (iii) bevel alignment (iv) tooth stops (v) adjust to plate thickness (vi) wearing parts (b) shingle #1-S, #5500-S Pribnow: (i) adjust kerf (ii) bevel alignment (iii) tooth stops (iv) adjust to plate (v) wearing parts
C. Proctor Roll and Peening	1. Describe and demonstrate peening: (a) hammer and dolly (b) location
D. Hard Surfacing of Saw Teeth	1. Describe stellite tipping: (a) band saw (b) circular (c) gangs (d) shingle

TOPIC	COURSE OBJECTIVES
	2. Describe and demonstrate carbide tipping: (a) band saws (b) circular saws 3. Describe heat induction tip hardening.
E. New Developments	1. Describe new developments to the forest industry: (a) #84 auto point swage and shaper (b) the rimsaw (c) the smart saw (d) other
F. Mathematics	1. Solve applied problems using formulas for: (a) diameters (b) circumference 2. Solve applied problems involving speeds: (a) R.P.M. (b) S.F.P.M.
G. Basic Levelling and Tensioning	1. Describe basic levelling and tension: (a) terms (b) tools (c) levelling procedures (d) tension procedures
SECTION FOUR:	**BAND SAW FITTING**
A. Band Saw Safe Handling Practices	1. Describe and demonstrate safe handling practices of band saws: (a) removal from crates (b) untying of new saws (c) changing hand (d) placement and removal from grinder (e) placement and removal from bench
B. Band Saw Inspection Procedures	1. Describe and demonstrate all inspection procedures: (a) cracks (b) welds (c) lumps (d) ridges (e) twists (f) dished and turned over saw (g) dullness (h) tooth damage
C. Crack Maintenance	1. Describe and demonstrate procedures for repairs to cracks: (a) punching (b) welding (c) annealing (d) dressing (e) plate maintenance

TOPIC	COURSE OBJECTIVES
D. Missing Teeth and Missing Tips	1. Describe and demonstrate procedures for replacing teeth and tips: (a) welding in blank (b) welding teeth (c) building up tips (d) low teeth
SECTION FIVE:	**GRINDING WHEELS**
A. Safety Practices, Storage, Care and Handling	1. Demonstrate safety checks for grinding wheels considering: (a) R.P.M. (b) cracks (c) blotters (d) collars 2. Demonstrate proper storage, care and handling of grinding wheels: (a) how to store, care and handle (b) where to store
B. Grinding Wheel Mounting	1. Demonstrate the installation of various grinding wheels on different types of grinding machines: (a) band saw grinder (b) automatic and hand circular saw grinders (c) knife grinders (d) carbide saw grinders (e) hand grinders (f) bench grinders
C. Grinding Wheel Dressing and Shaping	1. Demonstrate dressing to obtain correct profile for different tooth outlines and knife cutting edges: (a) band saw — standard and frost teeth (b) hollow ground saws — plunge and generative (c) trimsaw — spring set (d) slasher saws (e) cut off saws (f) profile knives (g) straight knives
D. Inspect and Dress Other than for Correct Profile	1. Demonstrate dressing of wheels: (a) dirt (b) glaze (c) oil
E. Grinding Wheel Speeds	1. Demonstrate proper and safe wheel operating speed for: (a) vitrified — saws and knives (b) resinoid — saws and knives (c) diamond — carbide tip saws and knives

TOPIC	COURSE OBJECTIVES
SECTION SIX:	**BASIC CIRCULAR SAW FITTING**
A. Safe Handling Practices	1. Describe and demonstrate safe handling practices for circular saws: (a) hoists (b) cradles (c) dollies (d) rim clamps (e) cut-off saw rigging 2. Identify and describe personal safety equipment: (a) eyes (b) ears (c) respiratory (d) toes (e) hands (f) follow lock-out procedures
B. Types of Circular Saws	1. Identify and describe all types of circular saws: (a) cut-off saw — solid and inserted teeth (b) head — solid and inserted teeth (c) edges — solid, insert, carbide and stellite teeth (d) trim — solid and carbide teeth (e) slasher (f) double arbour strob (g) lath — solid, insert and carbide tip teeth
C. Circular Saw Inspection	1. Identify and describe all inspection points before grinding a saw: (a) tooth damage (b) set (c) dish (d) cracks (e) welds
D. Crack Maintenance	1. Describe W.C.B. regulations on repairs to all types of cracks in circular saw: (a) length (b) rim (c) collar area 2. Describe and demonstrate different procedures to arrest cracks: (a) punching (b) welding (c) drilling
E. Circular Saw Grinding Equipment	1. Identify and describe all types of grinding equipment: (a) manual (b) automatic

TOPIC	COURSE OBJECTIVES
F. Grinder Set-Ups for Circular Saws	
	1. Describe and demonstrate the setting up of manual and automatic grinders for: (a) feed finger and assembly (b) cam set-ups (c) gate assembly (d) oscillation assembly (e) head assembly (f) stroke (g) multiple lift (h) centering
	2. Identify and describe lubrication and non-lubrication points: (a) bearing (b) saw clamp (c) non lubricating points
SECTION SEVEN:	**CHAIN SAWS**
A. Safety and Lubrication	
	1. Describe and demonstrate safe handling and lubrication of all chain saws: (a) safety equipment (b) oil baths (c) oilers
B. Types of Chain	
	1. Identify and describe different types of chain: (a) 300 pond (b) pond and deck (c) power saw
C. Gauge and Pitch	
	1. Describe and calculate chain gauge and pitch.
D. Inspection and Repairs	
	1. Describe and demonstrate proper inspection and repair procedures and causes to: (a) tie straps (b) cutters (c) drive links (d) tight joints (e) crooked cutting (f) sprockets (g) nose bars (h) bars (i) cold weather
E. Set-Up and Sharpening	
	1. Describe and demonstrate grinder set-up and sharpening of chain saws by: (a) manual (file) (b) grinder
	2. Describe and demonstrate sharpening of: (a) cutters (b) depth gauge or raker

TOPIC	COURSE OBJECTIVES
	3. Describe and demonstrate special purpose sharpening: (a) ripping (b) boring
	4. Identify and describe tools required for set-up and sharpening: (a) files (b) raker gauge (c) chain breakers (d) rivet punch
F. Grinding Wheels and Profile	
	1. Describe and demonstrate required profile and wheel thicknesses: (a) cutters (b) depth gauge (raker)
G. Troubleshooting	
	1. Identify and describe chain saw problems: (a) no oil (b) chain too tight or too loose (c) worn sprockets (d) bent bars (e) worn grooves (f) sharpening errors (g) stretched chain
SECTION EIGHT:	**SAW GUIDES, SCRAPERS, SHEARBOARDS AND COOLING SYSTEMS**
A. Guides	
	1. Identify types of saw guides for: (a) band saws (b) edgers (c) circular gangs
	2. Identify types of guide material: (a) wood (b) manufacturered material (c) babbit
	3. Identify different guide systems: (a) conventional type (b) pressure
B. Scrapers	
	1. Identify and describe various types and sizes of bandmill wheel scrapers: (a) location (b) materials (c) bevels
C. Cooling Systems	
	1. Identify and describe various types of cooling systems used in the trade: (a) bandmills (b) edgers (c) circular head saws (d) diamond wheels
	2. Identify types of liquid used in cooling systems: (a) water (conventional and spray) (b) oil (conventional and spray)

TOPIC	COURSE OBJECTIVES
D. Shearboards	1. Identify and describe various types of shearboards: (a) single cut (resaws — vertical and horizontal, twins and quads) (b) double cuts (c) outer saw shear (headrigs)
E. Maintenance	1. Identify and demonstrate maintenance of: (a) saw guides (band and circular) (b) shearboards (c) scrapers (d) cooling systems
SECTION NINE:	**WELDING**
A. W.C.B. Regulations	1. Describe and itemize W.C.B. regulations applicable to oxyacetylene welding in the saw trade.
B. Safe Welding Practices	1. List and describe the precautions to be considered when using welding equipment: (a) storage, handling, transportation and use of cylinders (b) securing and positioning burning outfit (c) fire hazards and extinguishers (d) safe working pressures (e) proper clothing (f) checking for leaks (g) eye protection — goggles and screens (h) ventilation (i) explosive substances
C. Identification of Welding Equipment	1. List and describe the components and features of the oxyacetylene outfit: (a) oxygen and acetylene cylinders — construction, safety features and pressures (b) oxygen and acetylene regulators — one and two stage (c) hoses — construction, colour and maintenance (d) flash backs and burn backs (e) reverse flow control valves (f) torch and tip — types and tip size factors (g) tip cleaners (h) goggles — glass shade (i) striker (j) fire extinguisher
D. Setting Up and Shutting Down Equipment	1. Demonstrate the safe procedure in setting up and shutting down welding equipment: (a) secure cylinders and crack valves — acetylene upright (b) attached regulators, hoses, torch and tip (c) set working pressures

TOPIC	COURSE OBJECTIVES
	(d) check for leaks (e) shut down equipment safely — bleed hoses
E. Tip Cleaning	1. Describe and demonstrate correct tip cleaning procedures: (a) drill (b) cleaners
F. Operating Oxyacetylene Welding Equipment	1. Demonstrate puddling and penetration of band saw blade.
G. Crack Welding	1. Describe and demonstrate proven skills and procedures in the welding of cracks. 2. Select and use appropriate tools and equipment required: (a) safety equipment (b) proper torch (c) upset and forging tool (d) forging hammer (e) welding rod (f) striker 3. Describe and demonstrate methods and procedures of: (a) welding clamp (b) levelling slab
H. Welding and Building Up Teeth	1. Describe and demonstrate proven methods of welding and building up saw teeth: (a) welding clamp (b) bench (c) grinder 2. Demonstrate the following procedures on built up saw teeth: (a) forging (b) shaping (c) annealing
I. Crack Maintenance	1. Describe and demonstrate proven methods of maintenance to welded cracks: (a) annealing (b) benching (c) dressing and finishing
J. Welding Equipment Maintenance	1. Describe and demonstrate maintenance of welding equipment: (a) welding clamp (b) forging hammer (c) forging tool (d) tips (e) torch (f) gauges
K. Welding Clamps	1. Describe and demonstrate use of welding clamps in securing saw for forging: (a) positioning (b) anvil clearance

SAWFILER PROGRAM
THIRD PERIOD

Subjects and Time Distribution

Third Period	Subjects	4 Weeks	120 Hours
Section One:	Review and Safety		40
Section Two:	Hand Tools		40
Section Three:	Shop Mathematics		41
Section Four:	Circular Saw Fitting		42
Section Five:	Oxy-Fuel and Arc Welding		45
Section Six:	Circular Saw Machine Maintenance and Alignment		46
Section Seven:	Circular Saw Filing Room Machine Maintenance		48

THIRD PERIOD TECHNICAL TRAINING
SAWFILER TRADE
COURSE OUTLINE

SECTION ONE: **REVIEW AND SAFETY**

TOPIC

COURSE OBJECTIVES

Upon completion of this section the apprentice will be able to:

A. Review and Extension

1. Review material covered in first and second periods as required.

B. Personal Safety

1. Use the appropriate personal protective clothing and equipment:
   (a) grinding
   (b) noise
   (c) saw handling
   (d) welding

C. Safe Work Environment

1. Demonstrate clean and safe work environment:
   (a) shop
   (b) equipment
   (c) tools
   (d) flammables (storage and use)
   (e) compressed gases
   (f) waste facilities

D. Power Operated Equipment and Machinery

1. Demonstrate the safe use of all power operated manual and automatic equipment.

E. Lock-Out Procedures

1. Demonstrate lock-out procedures for:
   (a) filing room equipment
   (b) mill equipment

F. Safe Saw Handling

1. Demonstrate safe saw handling procedures:
   (a) in the filing room
   (b) on the mill floor

G. First Aid Stations

1. Locate first aid station and equipment:
   (a) shop
   (b) plant

SECTION TWO: **HAND TOOLS**

A. Safe Use of Hand Tools

1. Describe and demonstrate safe and proper holding practices of various hand tools:
   (a) hammers
   (b) straight edges
   (c) saw gauges
   (d) sets

TOPIC	COURSE OBJECTIVES
B. Care and Maintenance of Hand Tools	1. Describe and demonstrate maintenance of circular saw hand tools: (a) hammer faces (all types) (b) gauges (c) straight edges 2. Describe and demonstrate the making of straight edges and tension gauges (band and circular): (a) level (b) twist removal (c) grinding (circle and straight)
C. Selection of Hammers, Straight Edges and Gauges	1. Identify and select hammers, gauges and straight edges required to hammer any given circular saw: (a) cut off (b) hollow ground (c) insert tooth edger (d) thin kerf solid tooth edger (e) circular headsaw or scrag saw (f) strob saw
D. Anvils and Levelling Slab Maintenance	1. Demonstrate correct care and maintenance to: (a) anvils (b) levelling slabs (c) strob slabs
SECTION THREE:	**SHOP MATHEMATICS**
A. Review First and Second Periods	1. Demonstrate proficiency of items covered in first and second periods by solving applied problems involving: (a) circumference (b) diameter (c) S.F.P.M. (d) R.P.M.
B. Tooth Bite	1. Solve applied problems involving tooth bite: (a) circular saw (b) band saws
C. Feeds and Speeds	1. Solve applied problem involving feeds and speeds: (a) circular saws (b) band saws
D. Horsepower Requirements	1. Calculate horsepower requirements for any given saw: (a) circular saw (b) band saws

TOPIC	COURSE OBJECTIVES
SECTION FOUR:	**CIRCULAR SAW FITTING**
A. Safe Handling Procedures for Circular Saws	1. Describe and demonstrate safe handling of circular saws: (a) cut off saws (b) edger saws (c) trim saws (d) clusters 2. Demonstrate the use of safety equipment: (a) hoists (b) conveyence (c) removal and replacement (machines and grinders)
B. Inspection	1. Describe and demonstrate the approved inspection procedure and safe use of cleaning agents: (a) cleaning (scrapers and dip tanks, liquid solutions) (b) plate maintenance (c) cutting edge maintenance
C. Selection of Tools and Equipment	1. Identify and select appropriate tools and equipment for procedure required: (a) safety equipment (b) cleaning (c) sharpening (d) hammering (e) removing and replacement (machines and grinders)
D. Twists	1. Describe and demonstrate twist removal: (a) safety equipment (b) tools required (c) hammering procedures
E. Levelling	1. Describe and demonstrate the removal of all lump and ridges and cross bumps from circular saws: (a) eye (b) body (c) rim 2. Describe and demonstrate the use of tools and equipment for "1" above: (a) hammers (twist, cross and dog faced) (b) straight edges (all sizes) (c) R.P.M. gauges (d) dishing rolls and other related equipment 3. Describe and demonstrate the correct method of holding and reading of R.P.M. gauges and straight edges: (a) concave side (b) convex side (c) straight edge for eye (d) straight edge for plumbing (e) slotted strob gauge (rim) 4. Describe and locate different conditions found on a given saw plate (trade terms): (a) fast

TOPIC	COURSE OBJECTIVES
	(b) open (c) tight (d) dish (e) stiff 5. Describe and demonstrate levelling using: (a) straight edge and soft anvil (b) R.P.M. gauge and hard anvil
F. Tensioning	1. Describe and demonstrate the tensioning of circular saws using: (a) stretcher rolls (b) hammer and anvil
G. Plumbing	1. Describe and demonstrate plumbing a circular saw: (a) on the floor or anvil (b) on the mill
H. Collars and Spacers	1. Clean, inspect and maintain collars and spacers: (a) circular head saws (b) edgers (all types) (c) ship and saws (d) clusters and double edgers
I. Tooth Profiles	1. Identify and describe tooth profiles: (a) solid tooth (rip and crosscut) (b) carbide saws (rip and crosscut) (c) stellite (rip and crosscut)
J. Tooth Replacement	1. Describe and demonstrate tooth replacement and alignment: (a) rip saws (b) crosscut 2. Identify and describe tools required for replacing saw teeth: (a) shank wrenches (all types) (b) drift (c) punch and hammer 3. Identify, describe and demonstrate installation of different styles of rip saw teeth and holders: (a) shanks (holders) (i) single circle (patterns #1 to #5) (ii) double circle (D, B & F patterns) (iii) frost (simolock, super and acme) (b) saw bits (teeth) (i) styles: — standard — simolock — diamond point — hog — standall — shone — wallace and da

TOPIC	COURSE OBJECTIVES
	(ii) manufactured material: — carbon steel — chromed — high speed steel — inlaid (c) kerf and gauge 4. Identify, describe and demonstrate installation of different types of cut off teeth: (a) styles: (i) jumbo (ii) cedar (shingle mills) (iii) #2 1/2 pattern (b) manufactured material: (i) carbon steel (ii) high speed steel (iii) stainless steel (iv) inlaid (v) carbide tip
K. Hard Facing	1. Describe and demonstrate hard facing of saw teeth: (a) carbide (b) stellite (c) induction heating (d) high speed steel (e) inlay
L. Tip and Saw Tooth Clearance	1. Determine clearance of saw teeth and tips: (a) dry stock (b) green stock (c) frozen timber (d) hardwoods (e) softwoods (f) abrasive timbers
M. Diamond Wheels	1. Select diamond wheel grit to sharpen carbide tips: (a) wet grinding (b) dry grinding
N. Carbide Tip	1. Describe and demonstrate the sharpening of carbide tips: (a) top (b) face (c) side
O. Circular Saw R.P.M.	1. Select the appropriate R.P.M. for the circular saw from the table for R.P.M. of circular saws.
P. Tension Distribution	1. Inspect to ensure proper distribution of tension.

TOPIC	COURSE OBJECTIVES
SECTION FIVE:	**WELDING**
A. Oxygen-Fuel Safety	1. Demonstrate safe handling procedures for oxygen-fuel welding practices: (a) storage (b) tank change over
B. Skills and Procedures	1. Perform welding/brazing skills using the appropriate oxy-fuel procedures as required: (a) review of First and Second periods (b) circular saw crack welding and maintenance
C. Safe Arc Welding Practices	1. Describe appropriate arc welding regulations, safety procedures and precautions to be considered when using arc welding equipment: (a) location of machine (b) good machine and cable connections (c) electric shock — damp ground (d) fire hazards and extinguishers (e) proper clothing — arc burn (f) eye protection, proper helmet and screens (g) ventilation (h) explosive substances (i) industrial health and safety regulations (W.C.B.)
D. Arc Welding Components and Equipment	1. List and describe components of arc welding equipment: (a) power supply (b) booth (c) ground and electrode cables (d) clamps (e) electrode holder (f) electrode holder hanger (insulated)
E. Processes	1. List and describe arc welding processes: (a) adjusting and starting (b) select electrode (c) striking arc (d) electrode motions (e) running arc bead
F. Electrodes	1. List, describe and select welding electrodes for welding saw steel: (a) coating — types and effects (b) wire or rod size (c) arc stream, gas shield and slag (d) fusion, penetration and reinforcement (e) electrode classification — tensile — strength, position used and rod characteristics
G. Starting and Stopping	1. Demonstrate correct procedure to follow for start and shut down of arc welding equipment: (a) start-up (b) shut down

TOPIC	COURSE OBJECTIVES
H. Setting and Testing	1. Demonstrate setting the arc welding machine and testing the setting: (a) metal and electrode thickness (b) voltage (c) amperes (d) practice beads
I. AC and DC Machines	1. Explain the use and care of welding machines: (a) AC (b) DC
J. Use and Care of Equipment	1. Use and care of the following equipment: (a) cables (b) electrode holders (c) holders (d) rods (e) helmets (f) jackets (g) gloves
K. Saw Arc Welding	1. Demonstrate the arc welding of shoulders (horns) on circular rip and crosscut saws: (a) preparation (b) welding (c) annealing (d) finishing
SECTION SIX: CIRCULAR SAW MACHINE MAINTENANCE AND ALIGNMENT	
A. Safe Maintenance Procedure	1. Describe and demonstrate safe maintenance procedures of all types and sizes of circular saws: (a) uncrating (b) sharpening (c) conveyence and storage (d) removal and replacement
B. Lock Out Equipment	1. Describe and demonstrate lock-out procedures: (a) machines (b) feed systems
C. Tools and Equipment	1. Identify and select appropriate tools and equipment for procedure required for the alignment and maintenance of: (a) circular headrigs (b) circular gangs (c) edgers and straight edges (d) circular resaws (e) scraggs (f) cut-offs, trims and slashers

TOPIC	COURSE OBJECTIVES
D. Circular Headrig Alignment	1. Describe and demonstrate circular headrig alignment: (a) lock-out arbor and feed works (b) track (c) husk and arbor (d) top and bottom saw (e) lead (f) guide alignment
E. Circular Gang Line-Ups	1. Describe and demonstrate circular gang saw line-up: (a) lock-out arbor and feed rolls (b) arbor (c) feed rolls (d) infeed (e) outfeed (f) straight edge (where applicable)
F. Edger and Straight Edge Line-Up	1. Describe and demonstrate alignment procedure for edgers and straight edges: (a) lock-out procedures (b) arbor (c) feed rolls (d) infeed rolls (e) outfeed rolls (f) straight edge
G. Circular Resaw Alignment	1. Describe and demonstrate circular resaw alignment: (a) lock-out procedures (b) arbor (c) feed rolls (d) line bar (e) infeed (f) outfeed
H. Cut-Off, Trim and Slasher Line-Ups	1. Describe and demonstrate the line-up of cut-off trim and slasher saws: (a) lock-out procedures (b) arbors (c) lead (d) chain and buckets (spurs)
I. Scragg Alignment	1. (a) trims (b) cut offs (c) scraggs (d) chip-n-saws
J. Arbors, Collars and Chipping Heads	1. Describe and inspect various types of arbors and collars: (a) lock-out procedures (b) with fast and loose collars (c) spline (d) double key ways (e) double keys (f) double arbors

TOPIC	COURSE OBJECTIVES
	(g) taper lock (h) various other types of collars and spacers (i) chipping heads
K. Noise Abatements	
	1. Describe noise abatement methods: (a) tooth patterns (b) adjusting tension (c) enclosures (d) rim slots (e) speed
L. Machine Maintenance	
	1. Maintenance: (a) feed rolls (b) bearings (c) wear strips
M. Guides and Cooling Systems	
	1. Inspect and repair guides and cooling systems: (a) guide maintenance (all types) (b) water (c) air and water (d) oil mist (e) jets and fittings (f) positioning (g) drilled arbors
SECTION SEVEN:	**CIRCULAR SAW FILING ROOM MACHINE MAINTENANCE**
A. Saw Bench Set-Ups	
	1. Describe and demonstrate circular saw bench set-ups: (a) cut-offs (b) circular headsaws and scraggs (c) carbide and solid tooth bull edgers (d) strobe and pony edgers 2. Describe and demonstrate anvil and slab maintenance: (a) hard faced anvils (b) circular slabs
B. Swage and Shaper Maintenance	
	1. Describe and demonstrate circular saw swage and shaper maintenance: (a) swages (hand and air assist) (b) shaper (hand and air assist) (c) bench set-up 2. Describe and demonstrate adjustments and wearing part maintenance: (a) swage (bite) (b) shaper (kerf) (c) carbide and carbon steel anvils (d) dies

TOPIC	COURSE OBJECTIVES
C. Circular Stretcher Rolls	1. Describe and demonstrate use of stretcher rolls: (a) tensioning (b) levelling (c) pressure (d) dishing 2. Describe and demonstrate maintenance to stretcher rolls: (a) lubrication (b) roll grinding
D. Automatic and Manual Grinders	1. Describe and demonstrate operation of manual grinders: (a) jointing (b) bevels (c) depth (d) wheel choice and profile 2. Describe and demonstrate operation of automatic circular saw grinders: (a) cut-off and "N" style (b) "K" style (rip) (c) "M" style (slashers) (d) "P" style (hollow ground) (e) plunge and generative grinding 3. Describe and demonstrate necessary adjustments to change from one style to another: (a) feed fingers (b) wheel selection and profile (c) stroke (d) depth and tooth profile (e) long teeth on one side (f) oscillation (rip and crosscut) (g) cams and adjustment (h) clamp gate and pressure 4. Describe and demonstrate maintenance to automatic and manual grinders: (a) lubrication (automatic and manual) (b) cams and roller (automatic) (c) feed finger (automatic) (d) bevel cam switch (automatic) (e) head slides (automatic) (f) lift screw and crown gears (automatic) (g) rack and pinion gears (manual)
E. Carbide	1. Describe and demonstrate carbide tipping of circular saws: (a) tip selection for required kerf (b) torch setting (c) annealing 2. Identify and select required tools: (a) setting stand (b) proper sized torch and equipment (c) silver solder (d) production (e) wire brush (f) tweezers

TOPIC	COURSE OBJECTIVES
	3. Identify and explain reasons for tip loss and cracks: (a) improper cleaning of joint (b) overheating solder (c) cold solder joint (d) tip movement during cooling (e) heat or grinding checks (f) flux (g) shank breakage-chill lines
	4. Describe and demonstrate the grinding of carbide tips, face, top, side: (a) cleaning systems (b) hammering (c) tip seats (d) profile renewed
F. Stellite	
	1. Describe stellite tipping of circular saws: (a) manual (b) automatic
	2. Describe steps required to stellite tip saw: (a) tooth profile (b) tipping (c) annealing (d) side dressing (e) sharpening
G. Guide Maintenance	
	1. Inspect and maintain guide wearing surfaces: (a) manual (b) stationary millers (c) hand router
H. Lubrication	
	1. Perform correct lubrication procedures: (a) swage and shaper (b) machines (c) slabs and anvils (d) saws for storage

SAWFILER PROGRAM
FOURTH PERIOD

Subjects and Time Distribution

Fourth Period	Subjects	4 Weeks	120 Hours
Section One:	Review and Safety		52
Section Two:	Band Saws		52
Section Three:	Shop Mathematics		55
Section Four:	Band Mill		55
Section Five:	Band Saw Filing Room Machine Maintenance		59

FOURTH PERIOD TECHNICAL TRAINING
SAWFILER TRADE
COURSE OUTLINE

SECTION ONE: REVIEW AND SAFETY

TOPIC	COURSE OBJECTIVES
	Upon completion of this section the apprentice will be able to:
A. Review and Extension	1. Review material covered in previous courses as required.
B. Personal Safety	1. Use the appropriate personal protective clothing and equipment: (a) grinding (b) noise (c) saw handling (d) welding
C. Safe Work Environment	1. Maintain a clean and safe work environment: (a) shop (b) equipment (c) tools (d) flammables (storage and use) (e) compressed gases (f) waste facilities
D. Power Operated Equipment and Machinery	1. Demonstrate the safe use of all power operated manual and automatic equipment.
E. Lock-Out Procedures	1. Demonstrate lock-out procedures for: (a) filing room equipment (b) mill equipment
F. Safe Saw Handling	1. Demonstrate safe saw handling procedures: (a) in the filing room (b) on the mill floor
G. First Aid Stations	1. Locate first aid station and equipment: (a) shop (b) plant

SECTION TWO: BAND SAW

A. Band Saws	1. Demonstrate safe handling practices: (a) uncrating (b) transporting (c) removal and replacing on machines (i) band mill (ii) grinders (d) changing the hand

TOPIC	COURSE OBJECTIVES
B. Inspection Procedures	1. Describe and demonstrate band saw inspection procedures: (a) grinder (double and single cuts) (i) clean (ii) cracks (iii) bent, broken and other tooth damage (b) bench (i) preparation (ii) level (iii) tension (iv) bent welds (v) crack maintenance (c) welding (i) bench (ii) welding clamp
C. Tools and Equipment	1. Identify and select tools, equipment and materials required for the following: (a) benching (b) welding (c) shaping
D. Twists	1. Describe and demonstrate twist removal: (a) manual (b) stretcher roll (c) hammer
E. Levelling	1. Describe and demonstrate levelling techniques and procedures and explain purposes: (a) use of gauge (b) determine ridge and bump location (c) cross levelling (d) hammer weights and use (cross and twist face) (e) with stretcher roll (f) methods of securing plate to anvil (g) gauge and hammer face maintenance
F. Tensioning	1. Describe and demonstrate tensioning techniques and procedures and explain purposes: (a) review of terms (b) use of tension gauge (c) location of tight areas (d) tire (e) back maintenance (f) peening (g) heat tension (h) butt weld and welds (i) amount required
G. Back	1. Describe and demonstrate back maintenance and explain purpose: (a) double cuts (b) silver tooth

(c) single cut
  (i) headrigs
  (ii) resaws
  (iii) twins
  (iv) quads

2. Describe and demonstrate the use of different types of back gauges:
   (a) dial
   (b) 3 point
   (c) solid steel
3. Describe purpose and demonstrate the grinding of band saw backs:
   (a) on the mill
   (b) on the grinder

H. Welding

1. Describe different saw welding system, procedures and maintenance:
   (a) oxyacetylene
   (b) gas arc
     (i) helium
     (ii) argon
     (iii) CO_2
     (iv) tungsten arc
   (c) atomic (hydrogen electric)
2. Describe and demonstrate welding procedures of oxyacetylene system:
   (a) penetration
   (b) puddles
   (c) forging
   (d) finishing edges
   (e) annealing
3. Describe and demonstrate equipment maintenance:
   (a) oxyacetylene
     (i) welding clamp anvil
     (ii) hammer face
     (iii) forging tool and air hammer
     (iv) tips
   (b) gas arc
     (i) electrode (clean and proper size)
     (ii) check fittings
     (iii) steel rods

I. Shearing

1. Describe and demonstrate shearing of band saws to proper length:
   (a) required hand
   (b) single cut
   (c) double cut
2. Describe and demonstrate the preparation of a band saw to be butt welded:
   (a) cutting to length
   (b) placement in saw clamp (gap and alignment)
   (c) anvil clearance
3. Describe and demonstrate the preparation of a band saw for brazing:
   (a) cutting to length
   (b) bevel for required hand
   (c) lap grinder set-up
   (d) placement in brazing clamp
   (e) silver solder and flux application
   (f) preparation of brazing irons and wedge
   (g) brazing furnace

TOPIC	COURSE OBJECTIVES
J. Tension Table	1. Describe and demonstrate the use of the wide band saw tension chart for determining the required tension according to width and thickness of a given saw plate.
SECTION THREE:	**SHOP MATHEMATICS**
A. Review	1. Demonstrate proficiency of shop mathematics required on second and third periods by solving applied problems.
B. Key Number	1. Demonstrate proficiency in calculation of rate of feed and key number.
C. Tooth Bite	1. Demonstrate proficiency in the calculation of band saw tooth bites: (a) tooth bite formula (b) practice calculations given feed speed, S.F.P.M. and tooth space
D. Gullet Capacity	1. Solve applied problems involving calculating gullet capacity to any given saw specifications.
E. Strain	1. Solve applied problems involving calculations of required strain on a band saw plate given the width and thickness of plate (basic formula): (a) conventional strain (b) high strain
SECTION FOUR:	**BAND MILL**
A. Lock-Out Procedures	1. Demonstrate lock-out procedures to be followed during band mill maintenance: (a) head rigs (i) track alignment (ii) wheel grinding (iii) mill alignment (iv) guide maintenance and cooling system checks (v) saw changes (b) resaws, twins and quads (i) mill alignment (ii) wheel grinding (iii) infeed and outfeed systems (iv) line bar and feed roll alignment (v) saw changes (c) edgers (i) saw and guide changes (ii) arbor and feed roll alignment (iii) outfeed and infeed roll checks (iv) straight edge re-alignment (d) trimsaws, cut-off saws and gang saws

TOPIC	COURSE OBJECTIVES
B. Tools and Equipment	1. Identify and select tools and equipment for the following maintenance procedures: (a) mill alignment (b) track alignment (c) roll alignment (d) line bar alignment (e) straight edge alignment
C. Band Mill Alignments	1. Describe and demonstrate systems of band mill alignment: (a) head rigs (b) resaws (vertical and horizontal) (c) twins (d) quads 2. Describe and demonstrate alignment checks on the following: (a) track alignment and level (b) crossline (c) wheel overhang and alignment (d) lead (e) square bottom wheel to tracks (f) guide alignment (pressure and conventional) 3. Describe alignments of quads and twins: (a) mills (b) infeed (c) outfeed 4. Describe systems of aligning resaws: (a) feed rolls (b) line bars (c) infeed (d) outfeed (e) splitters (f) guide (pressure and conventional)
D. Other Benchman Alignment Responsibilities	1. Describe the alignments of the following (review of circular saws): (a) gang saws (sash type and circular) (b) trimmers (c) edgers (d) cut offs (circular and chains)
E. Edger Alignment	1. Check alignment of edger: (a) infeed rolls to arbor (b) straight edge (c) outfeed
F. Trims	1. Describe how to line trimmers for proper adjustment: (a) arbor (b) feed chains (c) bucket alignment (d) depth of cut

TOPIC	COURSE OBJECTIVES
G. Strain Systems	1. Describe and maintain various types of strain systems: (a) conventional (simple and compound) (b) compress spring (c) air (d) air over weight (e) hydraulic and gas 2. Calculate the required strain per sq. in. on conventional systems (vertical and horizontal): (a) simple (b) compound (c) strain required (d) weights (e) counterweights 3. Describe and maintain strain points and sockets: (a) angles (b) hardness (c) maintenance
H. Bearings	1. Inspect and describe bearings and maintenance: (a) adjustment (clearance) (b) lubrication (c) assembly and installation (d) types
I. Band Mill Wheel Grinding	1. Describe and demonstrate set-up and grinding of band mill wheel faces: (a) follow lock-out procedures (b) mill preparation (c) solid installation (d) grinder maintenance (e) alignment (grinder to wheel) (f) crown (double and single cut) (g) taping (for wheel) (h) grinding wheel (i) power head (j) straight edge check and tape
J. Band Mill Wheel Balance	1. Check wheel balance (balancing done by outside source): (a) static (b) dynamic
K. Guides and Ways	1. Inspect guides, ways and alignment, and demonstrate repairs to guides: (a) conventional (b) pressure (c) cartridge typer
L. Band Mill Shift Inspections and Maintenance	1. Inspect and maintain pressure guide, wheel scrapers, shear boards and cooling systems: (a) describe and demonstrate pressure guide care and maintenance: (i) purpose (ii) materials (iii) replacement

TOPIC	COURSE OBJECTIVES
	(iv) set-up (v) resurfacing (vi) tools and equipment (b) inspect and maintain coolant systems: (i) purpose (ii) types (iii) nozzles (c) inspect and maintain shear boards (single and double cut): (i) purpose (ii) material (iii) adjustment (d) inspect and maintain wheel scrapers: (i) purpose (ii) material (iii) angles (iv) counterweights
M. Troubleshooting	1. Identify the problem and following appropriate troubleshooting procedures, correct the problem caused by the following equipment: (a) alignment (b) carrage (bed skids and knees) (c) set works (d) trucks (wheels) (e) dogs (f) tapers (g) feed 2. Identify and rectify sawing problems caused by the saw: (a) leading (fitting, benching and guides) (b) snaking (c) thick and thin (double cuts) (d) bull heading (e) cracks 3. Identify problems that cause the saw plate to crack: (a) tire line (b) tension (c) burnt gullets (d) bearing (e) strain (f) vibration (g) crossline (h) steel rubbing on plate (i) cross the line start (j) worn wheel face (k) sharp gullet profile (l) scratches across plate (m) metal impregnated guide material
N. Hydraulics	1. Read and interpret simple schematic hydraulic circuit diagrams, for minor troubleshooting problems that may arise during operations.
O. Cylinders and Rams	1. Detect trouble in piping, cylinders and rams.

TOPIC	COURSE OBJECTIVES

SECTION FIVE: **BAND SAW FILING ROOM MACHINE MAINTENANCE**

A. Band Saw Benches

1. Describe and demonstrate band saw bench set-ups (right and left hand):
   (a) planer mill resaws
   (b) resaws, twins and quads
   (c) headsaw 38' to 60'
   (d) wide thin plates
2. Describe and itemize bench components and their set-up:
   (a) stretcher rolls
   (b) levelling slabs (single and double cut)
   (c) elevating assembly
   (d) saw levelling stretchers
   (e) levelling weights
   (f) plate dishing and twist removal set-ups
   (g) peening anvils
   (h) welding clamp set-up
   (i) lighting systems
   (j) curtains
3. Describe and inspect levelling slabs (blocks):
   (a) solid
   (b) with core holes
   (c) hard faced
   (d) double cut
   (e) trunions
   (f) length, thickness and width
   (g) gang saw
4. Describe alignment, adjustments and maintenance of stretcher rolls:
   (a) alignment to levelling block
   (b) level
   (c) lubrication of bearing (needle and babbit) and ways
   (d) handle pressure
   (e) handle position (equal both edges)
   (f) roll radius

B. Filing Room Equipment

1. Describe the set-up and maintenance of all filing room equipment:
   (a) uniplane and cutters
   (b) chain saw grinder
   (c) saw dollies and carts
   (d) gauge grinder (tension gauges and straight edges)
   (e) back gauges

SUGGESTED BOOKS OF REFERENCE

Armstrong Saw Filer's Handbook
by P.S. Quelch
Armstrong Manufacturing Co.
P.O. Box 3008
2135 N.W. — 21 Avenue
Portland, Oregon, U.S.A. 97208

Sawmill Feeds and Speeds
Band and Circular Rip Saws
by P.S. Quelch
Armstrong Manufacturing Co.
P.O. Box 3008
2135 N.W. — 21 Avenue
Portland, Oregon, U.S.A. 97208

TECHNICAL TRAINING SCHOOL

The Sawfiler apprenticeship training program is offered by Alberta Career Development and Employment, Apprenticeship and Trade Certification. Staff and facilities for teaching the program are supplied by:

British Columbia Institute of Technology, Burnaby, British Columbia

LOCATION OF APPRENTICESHIP AND TRADE CERTIFICATION REGIONAL OFFICES

BONNYVILLE

CALGARY

EDMONTON

FORT McMURRAY

GRANDE PRAIRIE

HINTON

LETHBRIDGE

MEDICINE HAT

PEACE RIVER

RED DEER

VERMILION

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